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SITE ENVIRONMENTAL SPILL ASSESSMENT

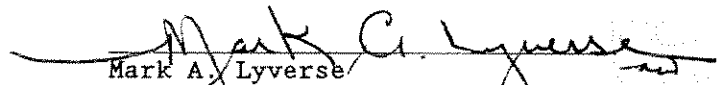
FOR PROPERTY LEASED BY

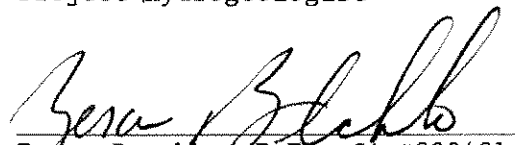
LEGGETT AND PLATT, INC.  
12352 EAST WHITTIER BOULEVARD  
WHITTIER, CALIFORNIA

OCTOBER 1989

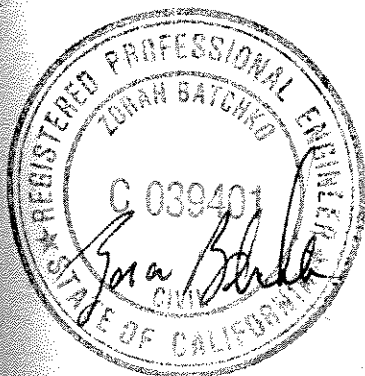
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## 1.0 INTRODUCTION

Leggett and Platt, Inc. has been manufacturing bedframes at their Bedline plant since November 1983. The approximately 225,000 square foot facility is located on leased property in Southwestern Los Angeles County. The manufacturing process includes painting of the completed bedframes. Past operations have resulted in the uncontrolled release of paints and paint solvents. The County of Los Angeles, Department of Health Services (DOHS) has issued notices to the Bedline facility for these unauthorized releases.

RMT, Inc. was retained by Leggett and Platt, Inc. to assist them with responding to DOHS' concerns outlined in the December 6, 1988, NOTICE OF VIOLATION AND ORDER TO COMPLY (NOV). This report has been prepared for Leggett and Platt, Inc. in response to item 5 of the NOV. All work was performed in general accordance with the outline in the Site Characterization/Mitigation Work Plans guidelines provided by the DOHS Hazardous Materials Program.

### 1.1 Project Background

In 1973, Bedline relocated its bedframe manufacturing, including physical relocation of the plant, to Whittier, California. Leggett and Platt, Inc. acquired Bedline manufacturing operations in November of 1983. The acquisition did not include the land which is leased.

This report, prepared by RMT, Inc. describes results of a spill assessment that was conducted on property leased by Leggett and Platt, Inc. and located at 12352 East Whittier Blvd. in Whittier, California. The report describes the field and laboratory investigations, and interpretation of the findings associated with the implementation of the site characterization work plan (RMT January 1989) approved by the DOHS on April 13, 1989. The DOHS is the lead regulatory agency for this investigation and the intended recipient of this report. The site characterization was undertaken to assess and characterize the potential environmental impacts that previous chemical "spills" may have had on an area surrounding the paint facility area.

## 1.2 Purpose and Scope

This report and the site investigation, which it documents, respond to item 5 of NOV dated December 6, 1988: "... provide this office [DOHS] with a site assessment and mitigation plan ...". The site assessment work plan was submitted to the Site Mitigation Unit of DOHS on January 31, 1989, by RMT on behalf of Leggett and Platt, Inc.; DOHS approval is dated April 13, 1989. The purposes of the site assessment were:

- Evaluate the nature and both vertical and horizontal extent of the suspected contamination.
- Identify existing and potential migration pathways.
- Identify and evaluate appropriate remedial measures if suspected contamination is confirmed.
- Collect and evaluate information necessary to prepare a remediation plan for any confirmed contamination.

Uncontrolled releases of painting operations products, diluted by the fire extinguishing waters, are the suspect contaminants. The work plan (RMT, January 1989) details the field and laboratory investigations which were performed to accomplish the above objectives. In summary, the completed work scope consisted of the following:

- Characterized "hazardous" materials being used on-site which had been identified by DOHS as the cause for concern.
- Completed soil vapor survey at 37 locations and extending down to approximately 10-foot depth to identify the horizontal and vertical extent, respectively, of effected subsurface.

Major aquifers in the Whittier area, in descending order, are:

- The Gauge Aquifer in the Lakewood formation
- The Jefferson, Lynwood, Silverado, and Sunnyside Aquifers in the San Pedro formation

The Gauge is the first water bearing member in the Whittier area and is characterized as being at approximately 40-foot depth and extending down to about 65-foot depth. The Gauge Aquifer is not considered an important source of ground water due to its lack of continuity, susceptibility to surface contamination, and relatively low storage capacity (thinness). However, owing to the Regional geology it is believed that the Gauge Aquifer is hydraulically connected to the underlying aquifers.

U.S. Geological Survey (USGS), California Department of Water Resources (CDWR), and Los Angeles County Department of Public Work (LADPW) well records were reviewed to obtain specific information on the geology, and hydrogeology, and ground water chemistry within the near site area. USGS and CDWR records were either outdated or non-existent in the site area; LADPW well records contained useful information.

A review of LADPW records determined that there are no ground water wells within a 1/2-mile radius of the Bedline site which are currently monitored by them; a driller's log for a previously abandoned well located within approximately 1,000 feet of the site was reviewed. Information on three monitoring wells lying within a 1-1/2 mile radius of the site was located; drilling logs were available for two of the three wells and water level data current for only two of the three wells also. Additional ground water data for the general area of the Bedline facility was reviewed from the 1988 ground water elevations contour map published by LADPW. Collectively, these information sources indicate that first water beneath the Bedline facility occurs approximately 95 feet below ground surface, elevation 120 feet MSL.

Site topography and drainage patterns have been altered by site development. Along the northern building limit the open and paved area slopes at several percent northward to the shallow, lined drainage ditch running along the northern property limit. This drainage ditch channels any flows westward to the culvert which discharges into the larger and unlined off-site drainage running north to south. The north-south drainage ditch is unnamed and generally serves to collect storm runoff from upgradient (more northerly) sites.

#### 1.4 Site Spill History (Background)

Historically, fires beginning in the painting oven area caused an activation of the sprinkler system, which in turn resulted in not only putting out the fire but also an excess of fluid consisting of water mixed with solvent-based paint which has spilled over onto the ground. These spills have resulted in three NOV being issued to Leggett and Platt by the DOHS (Appendix A). The cause of the fires has been attributed to an accumulation of paints inside the oven which reached a combustible condition. All three spills occurred during day shift operations. The fire department was called during each event, but fires were out by the time they arrived. Each spill lasted approximately 40 minutes and resulted in approximately 240 gallons of paint being mixed with 5,000 to 6,000 gallons of water which spilled on the asphalt-paved area north of the paint facility. Spreading of the spill was similar in each event. Most of the paint ran towards the on-site drainage ditch and began off-site movement through an underground culvert. A temporary containment berm was constructed in the on-site drainage ditch by Leggett and Platt personnel in order to halt movement off-site. A salvage company was called to pump out and remove the contaminated water and paint mixture. The fire department notified the DOHS, who issued the NOV to Leggett and Platt.

In response to the spills and in accordance with conditions stipulated on the latest NOV (Appendix A), Leggett and Platt has constructed a 10,000 gallon catchment basin in the paint facility area. Specifically, Part B of the "ADDITIONAL" heading requires that "[Leggett and Platt] Take all appropriate and necessary precautions to ensure the prevention of a hazardous materials

release." The basin is designed to collect and contain any runoff that may occur in association with a release of paint and water-diluted paint. The basin has been operable since June 1989.

## 2.0 FINDINGS AND CONCLUSIONS

1. Based on published information the facility is located on the Montebello Forebay subsection of the Central Basin physiographic area; soils in this region are primarily comprised of sand, some gravel and clay; and according to fall of 1987 data, ground water occurs at around 90-foot depth (LACDPW, 1988).
2. To the maximum 25-foot depth investigated, predominantly silty clays or clays containing some fine to medium sand were observed and ground water was not encountered.
3. Based on a review of Materials Safety Data Sheets obtained for site materials and chemical analysis of paint sample obtained during plant operations the key chemical constituents of paint were toluene, xylene and ethylbenzene.
4. Vapor concentrations of up to 205 parts per million (ppm) from petroleum-related compounds were detected at various locations at depths of 1 to 2 and 8 to 10 feet below ground surface in the soil gas survey. The distribution of the vapor phase contamination is limited to the area north of the paint facility area and in the off-site drainage ditch (Figure 2). The presence of a non-petroleum-like product were noted at one location (V2) near the on-site culvert.
5. Based on soil samples collected from six boreholes that were located in areas having the highest soil vapor readings, no contamination was shown to exist in the soils at laboratory detectable limits from total petroleum hydrocarbons (TPH), or benzene, toluene, xylenes and ethylbenzene (BTX&E). [The apparent lack of correlation between the soil vapor measurements and the laboratory analyses is primarily the result of the greater numerical sensitivity of the vapor survey methodology as described in Section 3.2.1.1.]

6. Low concentrations of the halogenated volatile organic (HVO) compounds dichloromethane, trans-1,2-dichloroethylene, trichloroethylene, and 1,1,1-trichloroethane were present in four soil samples (LP1, LP2, LP3 and LP7 in Figure 2) in concentrations ranging from 0.1 to 0.6 mg/kg. (Thirty-nine HVO compounds were analyzed.) Because no HVO's existed in the paint/solvent mixture, it can be assumed that the presence of these compounds in the soil samples indicates a source other than the spilled material. These compounds may be the result of spilled cleaners or degreasers that are used in conjunction with equipment maintenance, cleaning activities, or other operational functions at the plant. The low concentrations of these compounds in the soil and relatively far distance to the aquifer indicate contamination to ground water from them is unlikely.

\* 7. This investigation has shown that subsurface soils at the leased Leggett and Platt Bedline facility have been impacted by the spilled paint and solvent that was formerly used in operations at the facility. Results also indicate that the current level of soil contamination is minimal and is not a threat to ground water.



part of other work and is not indicated on the Figure. The logs of each boring are presented in Appendix D.

Subsurface materials encountered in the soil borings generally consisted of silty clay including sand and some gravel. The sand encountered was generally fine to medium grained and at times contained some coarse gravel. The subsurface materials that were encountered as part of this study are consistent with the regional geologic information reviewed.

A total of 36 soil samples were collected from the six boreholes for on-site mobile laboratory analyses. During drilling, split-barrel samples were collected at a depth beginning at two feet below ground surface and at approximate five-foot intervals thereafter. The samples were taken immediately to the on-site mobile lab for analyses of total petroleum hydrocarbons (TPH) by EPA Method 8015M and BTX&E by EPA method 8020. Chemical analyses were completed on the two upper most soil samples at depths that approximated depths where soil vapor samples were collected (2 and 10 feet). Soil samples were collected at these depths in order to relate petroleum-like products that were detected in the gas phase by the portable GC to products present in the solid or soil phase. Soil sampling continued in each borehole at five-foot intervals to depths of 20 to 25 feet in order to assure investigators that contaminants had not migrated past the shallower depths.

#### 3.2.2.1 Results of Analyses for Petroleum Hydrocarbons

Results of the 36 chemical analyses showed that, at field lab detection limits of 1 mg/kg, no contamination from petroleum-like products existed in any of the six boreholes drilled for this investigation, at any depth. The results of the 36 analyses are shown as lab reports in Appendix E. The most likely explanation for the discrepancy between the measurable concentrations in the vapor phase and the non-detectable concentrations in the soils has been described in Section 3.2.1.1. Similar results have been described in at least one study (Murphy et al 1989) where the field head space concentrations for volatile organics were generally higher and more compounds were detected in the soils using the

portable GC than was measured in subsurface soils. This observation was attributed to the GC's lower detection limits and increased numerical sensitivity when compared to actual concentrations in soil.

#### 3.2.2.2 Results of Analyses for Halogenated Volatiles

A total of four soil samples were also analyzed for halogenated volatile organics (HVO) using EPA method 8010. The results of the lab analyses are summarized in Table 3-1, and original laboratory reports and chain-of-custodies are included in Appendix F. Samples were shipped within the prescribed EPA time allotment to a California-certified Laboratory for EPA Method 8010; the mobile lab was not certified for EPA 8010 testing.

Soil samples that were collected with the split barrel sampler from the two-foot depth from boreholes LP1, LP2, LP3 and LP7 were analyzed for HVO's. The following rationale was used for selecting samples that were analyzed:

- LP1 - Sample point was located in the paint facility area and soil was analyzed in order to check the area for the presence of HVO's that may have been used as degreasers or cleaning agents.
- LP2 and LP7 - Sample points were located in the channel that drained the diluted paint mixture from the paint facility area. These locations also had localized areas of discolored soil.
- LP3 - Sample point was located adjacent to a vapor monitoring point (V2 on Figure 2) that yielded a chromatogram different from other chromatograms and an effort was made to identify the anomaly.

In general, the following conditions were observed with regard to contamination from halogenated volatile organics:

- LP1, LP2 AND LP7 - Dichloromethane was measured at low concentrations (see Table 3-1) at these three boring locations. 1,1,1 - trichloroethane was

TABLE 3-1

ANALYTICAL RESULTS OF SOIL SAMPLES  
FOR HALOGENATED VOLATILE ORGANICS (HVO)

<u>Boring Number</u>	<u>Sample Depth Feet</u>	<u>Soil Concentration (mg/kg)</u>			
		<u>Dichloromethane</u>	<u>Trans-1,2- Dichloroethylene</u>	<u>Trichloroethylene</u>	<u>1,1,1-Trichloroethane</u>
LP1	2	0.3	ND	ND	0.1
LP2	2	0.6	ND	ND	ND
LP3	2	0.1	0.1	0.2	ND
LP7	2	0.5	ND	ND	ND
Acceptable Soil Concentrations <sup>1</sup>		47	--	32.0	--

ND - Not Detected at the limit of detection (0.01 mg/kg)

Halogenated Volatile Organics analyses performed by EPA Method 8010. All other compounds included in the analyses (35) were ND.

<sup>1</sup> U.S. EPA RCRA Corrective Action Target Levels. Hazardous Waste Report #9 (17), April 18, 1988.

measured at low concentrations at LP1. Both of these compounds are considered two of the least toxic of the HVO's (Alliance, 1980).

- LP3 - Dichloromethane, trans-1, 2-dichloroethylene and trichloroethylene (TCE) were found in low concentrations in this borehole. Dichloromethane and TCE were below U.S. EPA Corrective Action Levels for RCRA sites. Trans-1,2-dichloroethylene and trichloroethylene are most likely components of an industrial solvent or metal cleaner and are probably the reason for the anomalous chromatogram from this borehole (see soil vapor section).

The results of the analyses for HVO's indicates that very few of these compounds exist in soils at the selected sampling locations and those that exist are present in relatively low concentrations. The low levels and limited extent of HVO's found in soils at the site indicate contamination to groundwater from these contaminants is unlikely. (i.e., they would have to migrate 70 to 80 feet to the water table with little degradation.)